



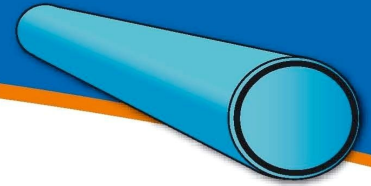
IPS Pipe Friction Loss

2 IPS (Ft. of Water per 100 ft. of Pipe)				
GPM	<u>160 psi</u>	<u>200 psi</u>	<u>250 psi</u>	<u>315 psi</u>
5	0.042	0.047	0.054	0.063
10	0.153	0.169	0.194	0.229
15	0.325	0.359	0.411	0.485
20	0.554	0.611	0.700	0.826
25	0.837	0.924	1.058	1.248
30	1.173	1.295	1.482	1.750
35	1.561	1.722	1.972	2.328
40	1.998	2.206	2.525	2.981
45	2.486	2.743	3.141	3.707
50	3.021	3.334	3.818	4.506
55	3.604	3.978	4.555	5.376
60	4.235	4.673	5.351	6.316
65	4.911	5.42	6.206	7.325
70	5.634	6.218	7.119	8.403
75	6.402	7.065	8.090	9.548
80	7.214	7.962	9.117	10.76

Bold indicates 5' / second velocity

2 1/2" IPS (Ft. of Water per 100 ft. of Pipe)				
GPM	<u>160 psi</u>	<u>200 psi</u>	<u>250 psi</u>	<u>315 psi</u>
5	0.017	0.019	0.021	0.025
10	0.061	0.067	0.076	0.091
15	0.129	0.142	0.162	0.193
20	0.220	0.242	0.276	0.329
25	0.333	0.366	0.417	0.498
30	0.467	0.512	0.585	0.698
35	0.621	0.682	0.778	0.928
40	0.796	0.873	0.997	1.189
45	0.990	1.086	1.240	1.479
50	1.203	1.320	1.507	1.797
55	1.435	1.574	1.798	2.144
60	1.686	1.850	2.112	2.519
65	1.955	2.145	2.450	2.922
70	2.243	2.461	2.810	3.352
75	2.549	2.796	3.193	3.809
80	2.872	3.151	3.599	4.292
85	3.213	3.526	4.026	4.802

Bold indicates 5' / second velocity



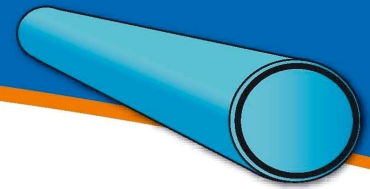
IPS Pipe Friction Loss

3" IPS (Ft. of Water per 100 ft. of Pipe)				
GPM	<u>160 psi</u>	<u>200 psi</u>	<u>250 psi</u>	<u>315 psi</u>
50	0.459	0.506	0.579	0.679
60	0.644	0.709	0.811	0.952
70	0.856	0.944	1.079	1.267
80	1.096	1.209	1.382	1.623
90	1.364	1.503	1.719	2.018
100	1.658	1.827	2.089	2.453
110	1.978	2.180	2.492	2.927
120	2.323	2.561	2.928	3.438
130	2.695	2.970	3.396	3.988
140	3.091	3.407	3.896	4.574
150	3.512	3.872	4.427	5.198
160	3.958	4.363	4.989	5.858
170	4.429	4.881	5.581	6.554
180	4.923	5.427	6.205	7.286
190	5.442	5.998	6.858	8.053
200	5.984	6.596	7.542	8.855

Bold indicates 5' / second velocity

4" IPS(Ft. of Water per 100 ft. of Pipe						
GPM	<u>100 psi</u>	<u>125 psi</u>	<u>160 psi</u>	<u>200 psi</u>	<u>250 psi</u>	<u>315 psi</u>
100	0.421	0.449	0.487	0.537	0.608	0.724
125	0.637	0.679	0.737	0.812	0.918	1.094
150	0.893	0.952	1.033	1.138	1.287	1.533
175	1.188	1.267	1.374	1.514	1.713	2.040
200	1.521	1.622	1.759	1.939	2.193	2.612
225	1.892	2.017	2.188	2.411	2.728	3.249
250	2.300	2.452	2.660	2.931	3.316	3.948
275	2.744	2.925	3.173	3.496	3.956	4.711
300	3.224	3.437	3.728	4.108	4.647	5.534
325	3.739	3.986	4.324	4.764	5.390	6.419
350	4.289	4.572	4.960	5.465	6.183	7.363
375	4.873	5.196	5.636	6.210	7.026	8.367
400	5.492	5.855	6.351	6.998	7.918	9.429

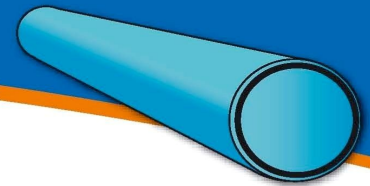
Bold indicates 5' / second velocity



IPS Pipe Friction Loss

6" IPS (Ft. of Water per 100 ft. of Pipe)				
	<u>100 psi</u>	<u>125 psi</u>	<u>160 psi</u>	<u>200 psi</u>
200	0.232	0.247	0.268	0.296
225	0.288	0.308	0.333	0.368
250	0.350	0.374	0.405	0.447
275	0.418	0.446	0.484	0.533
300	0.491	0.524	0.568	0.627
325	0.569	0.608	0.659	0.727
350	0.653	0.697	0.756	0.834
375	0.742	0.792	0.859	0.947
400	0.837	0.893	0.968	1.068
425	0.936	0.999	1.083	1.194
450	1.040	1.111	1.204	1.328
475	1.150	1.228	1.331	1.468
500	1.265	1.350	1.463	1.614
525	1.384	1.478	1.601	1.766
550	1.509	1.611	1.746	1.925
575	1.638	1.749	1.895	2.091
600	1.773	1.892	2.051	2.262

Bold indicates 5' / second velocity

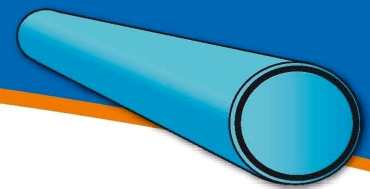


IPS Pipe Friction Loss

8" IPS (Ft. of Water per 100 ft. of Pipe)

GPM	<u>100 psi</u>	<u>125 psi</u>	<u>160 psi</u>	<u>200 psi</u>
300	0.136	0.145	0.157	0.173
325	0.158	0.168	0.183	0.201
350	0.181	0.193	0.209	0.231
375	0.205	0.219	0.238	0.262
400	0.232	0.247	0.268	0.295
425	0.259	0.277	0.300	0.330
450	0.288	0.307	0.333	0.367
475	0.318	0.340	0.369	0.406
500	0.350	0.374	0.405	0.446
525	0.383	0.409	0.444	0.489
550	0.418	0.446	0.484	0.532
575	0.453	0.484	0.525	0.578
600	0.491	0.524	0.568	0.626
625	0.529	0.565	0.613	0.675
650	0.569	0.608	0.659	0.726
675	0.610	0.652	0.707	0.778
700	0.653	0.697	0.756	0.832
725	0.696	0.744	0.807	0.888
<u>750</u>	0.742	0.792	0.859	<u>0.946</u>
<u>775</u>	0.788	0.841	<u>0.913</u>	1.005
<u>800</u>	0.836	<u>0.892</u>	0.968	1.066
<u>825</u>	<u>0.885</u>	0.945	1.025	1.128
850	0.935	0.999	1.083	1.192
875	0.987	1.054	1.143	1.258
900	1.039	1.110	1.204	1.326
925	1.094	1.168	1.267	1.395
950	1.149	1.227	1.331	1.465
975	1.206	1.287	1.396	1.537
1000	1.263	1.349	1.463	1.611

Bold indicates 5³/ second velocity

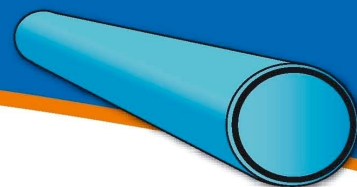


IPS Pipe Friction Loss

10" IPS (Ft. of Water per 100 ft. of Pipe)

GPM	<u>100 psi</u>	<u>125 psi</u>	<u>160 psi</u>	<u>200 psi</u>
500	0.120	0.128	0.139	0.159
525	0.131	0.140	0.152	0.174
550	0.143	0.153	0.165	0.190
575	0.155	0.166	0.180	0.206
600	0.168	0.180	0.194	0.223
625	0.181	0.194	0.210	0.241
650	0.195	0.208	0.225	0.259
675	0.209	0.223	0.242	0.277
700	0.224	0.239	0.259	0.297
725	0.239	0.255	0.276	0.317
750	0.254	0.271	0.294	0.337
775	0.270	0.288	0.312	0.358
800	0.286	0.306	0.331	0.380
825	0.303	0.324	0.351	0.402
850	0.320	0.342	0.371	0.425
875	0.338	0.361	0.391	0.449
900	0.356	0.380	0.412	0.473
925	0.375	0.400	0.433	0.497
950	0.394	0.420	0.455	0.522
975	0.413	0.441	0.478	0.548
1000	0.433	0.462	0.501	0.574
1025	0.453	0.484	0.524	0.601
1050	0.474	0.506	0.548	0.629
1075	0.495	0.529	0.573	0.657
1100	0.516	0.552	0.597	0.685
1125	0.538	0.575	0.623	0.714
1150	0.561	0.599	0.649	0.744
1175	0.583	0.623	0.675	0.774
1200	0.607	0.648	0.702	0.805
1225	0.630	0.673	0.729	0.836
1250	0.654	0.699	0.757	0.868
1275	0.679	0.725	0.785	0.901
1300	0.704	0.752	0.814	0.934
1325	0.729	0.779	0.843	0.967
1350	0.754	0.806	0.873	1.001
1375	0.781	0.834	0.903	1.036
1400	0.807	0.862	0.934	1.071
1425	0.834	0.891	0.965	1.107
1450	0.861	0.920	0.996	1.143
1475	0.889	0.950	1.029	1.180
1500	0.917	0.980	1.061	1.217

Bold indicates 5' / second velocity



IPS Pipe Friction Loss

12" (Ft. of Water per 100 ft.)				
GPM	<u>100 psi</u>	<u>125 psi</u>	<u>160 psi</u>	<u>200 psi</u>
850	0.140	0.149	0.162	0.178
875	0.147	0.157	0.171	0.188
900	0.155	0.166	0.180	0.198
925	0.163	0.174	0.189	0.208
950	0.172	0.183	0.199	0.219
975	0.180	0.192	0.208	0.230
1000	0.189	0.201	0.218	0.241
1025	0.198	0.211	0.229	0.252
1050	0.207	0.221	0.239	0.263
1075	0.216	0.230	0.250	0.275
1100	0.225	0.240	0.260	0.287
1125	0.235	0.251	0.272	0.299
1150	0.244	0.261	0.283	0.312
1175	0.254	0.272	0.294	0.324
1200	0.265	0.282	0.306	0.337
1225	0.275	0.293	0.318	0.350
1250	0.285	0.305	0.330	0.364
1275	0.296	0.316	0.342	0.377
1300	0.307	0.328	0.355	0.391
1325	0.318	0.339	0.368	0.405
1350	0.329	0.351	0.381	0.419
1375	0.340	0.363	0.394	0.434
1400	0.352	0.376	0.407	0.449
1425	0.364	0.388	0.421	0.464
1450	0.376	0.401	0.434	0.479
1475	0.388	0.414	0.448	0.494
1500	0.400	0.427	0.463	0.510
1525	0.412	0.440	0.477	0.526
1550	0.425	0.454	0.492	0.542
1575	0.438	0.467	0.506	0.558
1600	0.451	0.481	0.521	0.574
1625	0.464	0.495	0.537	0.591
1650	0.477	0.509	0.552	0.608
1675	0.491	0.524	0.568	0.625
1700	0.504	0.538	0.583	0.643
1725	0.518	0.553	0.599	0.660
1750	0.532	0.568	0.616	0.678
1775	0.546	0.583	0.632	0.696
1800	0.561	0.598	0.648	0.714
1825	0.575	0.614	0.665	0.733
1850	0.590	0.630	0.682	0.752
1875	0.605	0.645	0.699	0.771
1900	0.620	0.661	0.717	0.79

Bold indicates 5' / second velocity